

# Corning® Multimode Optical Fiber

## InfiniCor™ 300 Fiber

### Product Information

**CORNING**

PI1206  
Issued: 10/99  
ISO 9001 Registered

#### High Performance. Guaranteed.

InfiniCor™ 300 fiber is part of Corning's line of high-performance multimode fibers. InfiniCor fiber is engineered specifically for high-performance laser-based LAN protocols such as Gigabit Ethernet. InfiniCor 300 fiber is guaranteed<sup>(1)</sup> for transmission distances up to 300 meters in Gigabit Ethernet (IEEE 802.3z) compliant systems at 850 nm and up to 550 meters at 1300 nm. InfiniCor 300 fiber can operate at significantly greater distances (greater than 2,000 meters) at slower protocols such as Fast Ethernet, FDDI, and 155 Mb/s ATM.

#### Ultimate Compatibility

InfiniCor fiber ensures compatibility with legacy LAN systems by exceeding the minimum overfilled launch bandwidth (OFLBW) standard (EIA/TIA 568-A) in the 850 nm and 1300 nm operating windows. In addition, it guarantees Gigabit Ethernet performance by guaranteeing operating distance in standards-compliant systems. The traditional OFLBW specification is a measure of relative fiber performance capability when used with light-emitting diode (LED) sources. Laser performance represents link length capability with high-speed sources such as 850 nm vertical-cavity surface-emitting lasers (VCSELs), 1300 nm Fabry-Perot lasers, and 780 nm CD lasers.

Corning InfiniCor 300 fiber operates with a wide range of sources at 850 nm and 1300 nm. InfiniCor 300 fiber is a nominal 62.5/125  $\mu\text{m}$  graded-index multimode fiber design that is fully compatible with the installed base of standard 62.5/125  $\mu\text{m}$  fiber. InfiniCor 300 fiber also is system-compatible with standard 50/125  $\mu\text{m}$  fiber and the advanced InfiniCor 600 fiber for all standards-compliant links.<sup>(2)</sup>

#### Perfect For All Premises Applications

InfiniCor 300 fiber is suitable for installation in all premises applications including the backbone, riser, and horizontal. Typical applications are local area and campus-wide networks carrying data, voice, and/or video services using LEDs, 850 nm VCSELs, 780 nm CD lasers, and 1300 nm Fabry-Perot lasers. This product exceeds industry standards for fiber-optic network protocols, including Ethernet, Token Ring, FDDI, ATM, and Fibre Channel.

InfiniCor 300 fiber's excellent laser performance makes it a perfect choice for Gigabit Ethernet and other high-speed laser protocols. Since Gigabit Ethernet is expected to be the protocol of choice for backbone and riser links, Corning recommends InfiniCor 300 fiber for these applications.

## Everything You Need In A Premises Fiber

- *Higher data rates*
- *Longer transmission distances*
- *Upgradeability*

InfiniCor 300 fiber comes with an advanced mechanically strippable acrylate coating (CPC6) with a 245  $\mu\text{m}$  nominal outside diameter. It may be overcoated for use in tight buffer, loose tube and ribbon cable designs. The CPC6 coating provides superior protection of the glass fiber while allowing excellent stripping performance.

<sup>(1)</sup> Corning guarantees that InfiniCor fiber will perform up to its guaranteed link length for Gigabit Ethernet (IEEE 802.3z) speeds under associated cabler warranty programs. This guarantee applies only to links that are covered by a Corning-approved warranty program. The warranty program is implemented and serviced through various cable manufacturers. Actual warranty terms may vary from cabler to cabler.

<sup>(2)</sup> 10 Mb/s Ethernet link lengths are limited to 1,000 meters when mixing 50  $\mu\text{m}$  and 62.5  $\mu\text{m}$  fiber. Other standards-based link lengths are unaffected. See cabler warranty for specific compatibility guarantee.

## Optical Specifications

### Performance

- LED-based sources: Exceeds TIA/EIA-568-A minimum OFL BW (MHz•km) requirements at the 850 nm and 1300 nm operating wavelengths
- Laser-based sources: Laser performance is guaranteed to achieve 300/550 meters @ 850/1300 nm for Gigabit Ethernet (IEEE 802.3z) standard-compliant links

### Attenuation

$\leq 3.0/0.7$  dB/km @ 850/1300 nm

- No point discontinuity greater than 0.2 dB
- The attenuation at 1380 nm does not exceed the attenuation at 1300 nm by more than 1.0 dB/km
- The induced attenuation caused by wrapping the fiber 100 turns around a 75 mm mandrel shall not exceed 0.5 dB at 850 nm and 1300 nm

### Chromatic Dispersion

- Zero Dispersion Wavelength ( $\lambda_0$ ):  
 $1332 \text{ nm} \leq \lambda_0 \leq 1354 \text{ nm}$
- Zero Dispersion Slope ( $S_0$ ):  
 $\leq 0.097 \text{ ps}/(\text{nm}^2 \cdot \text{km})$

$$\text{Dispersion} = D(\lambda) \approx \frac{S_0}{4} \left[ \lambda - \frac{\lambda_0^4}{\lambda^3} \right] \text{ps}/(\text{nm} \cdot \text{km})$$

For  $750 \text{ nm} < \lambda < 1450 \text{ nm}$ ,  $\lambda =$  Operating Wavelength

### Core Diameter

- $62.5 \pm 3.0 \mu\text{m}$

### Numerical Aperture

- $0.275 \pm 0.015$

## Environmental Specifications

Environmental Test Condition	Induced Attenuation (dB/km)	
	850 nm	1300 nm
Temperature Dependence -60°C to +85°C	≤ 0.20	≤ 0.20
Temperature - Humidity Cycling -10°C to +85°C and 4% to 98% RH	≤ 0.20	≤ 0.20

Operating Temperature Range: -60°C to +85°C

## Dimensional Specifications

### Standard Length (km/reel)

- 2,200 - 8,800 meters
- Special lengths available upon request.

### Glass Geometry

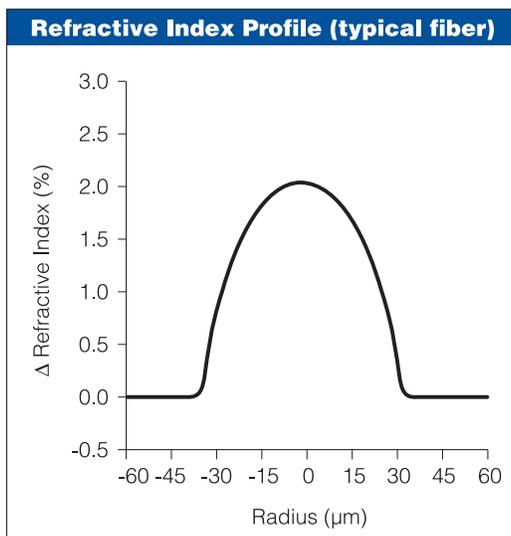
- Cladding Diameter: 125.0 ± 2.0 μm
- Core-Clad Concentricity: ≤ 3.0 μm
- Cladding Non-Circularity: < 2.0%
- Core Non-Circularity: ≤ 5%

Non-Circularity is defined as:

$$\left[ 1 - \frac{\text{Min. Diameter}}{\text{Max. Diameter}} \right] \times 100$$

### Coating Geometry

- Coating Diameter: 245 ± 5 μm
- Coating-Cladding Concentricity:  
< 12 μm



## Mechanical Specifications

### Proof Test

- The entire length of fiber is subjected to a tensile proof stress ≥ 100 kpsi (0.7 GN/m<sup>2</sup>).

## Performance Characterizations

Characterized parameters are typical values.

### Effective Group Index of Refraction ( $N_{eff}$ )

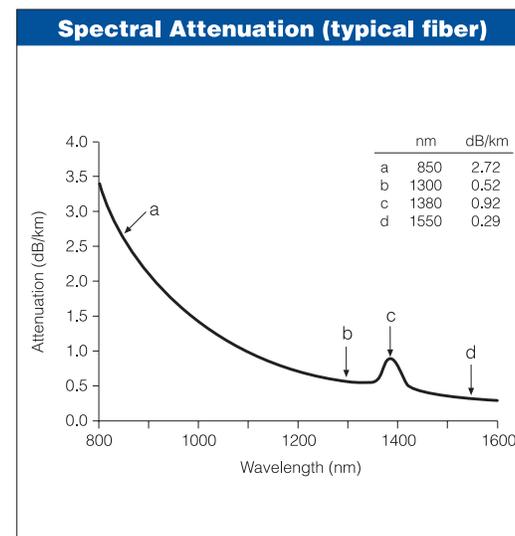
- 1.496 at 850 nm
- 1.487 at 1300 nm

$N_{eff}$  was empirically derived to the third decimal place using a specific commercially available OTDR.

### Fatigue Resistance Parameter ( $n_d$ ): 20

### Coating Strip Force

- Dry: 0.7 lbs (3.2 N)
- Wet: 14 days in 23°C water soak:  
0.7 lbs (3.2 N)



## Ordering Information

To order Corning® InfiniCor™ 300 CPC6 optical fiber, contact your sales representative, or call the Telecommunications Products Division Customer Service Department at **910-395-7659** (North America) and **+1 607-974-7174** (International). Please specify the following parameters when ordering:

**Fiber Type:** Corning® InfiniCor™ 300

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**Coating:** CPC6 (245 µm outside diameter)

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**Reel Lengths:** 2200, 3300, 4400, 6600, and 8800 meters

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**Fiber Quantity:** kms

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**Proof Test:** 100 kpsi (0.7 GN/m<sup>2</sup>)

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**Other:** (Requested ship date, etc.)

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